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APPEAL BRIEF

Applicant : Steve Hurson
App. No : 10/748,869
Filed : December 30, 2003
For : DENTAL IMPLANT SYSTEM
Examiner : Ralph A. Lewis
Art Unit : 3732

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Sir:

In accordance with the Notifications of Non-Compliant Appeal Brief dated July 3, 2008 and August 15, 2008, and the Notice of Appeal filed October 31, 2007, Applicant submits this Appeal Brief.

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I. REAL PARTY IN INTEREST

The real party in interest is Nobel Biocare Services AG, Balz Zimmerman-Strasse 7, 8152 Glattbrugg, Switzerland, which is the owner of the patent application by virtue of an assignment from the inventor at Reel No. 015812/0071.

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II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals or interferences.

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III. STATUS OF CLAIMS

Claims 2 and 12-17 have been canceled. Claims 1, 3-11, and 18-35 were finally rejected in the Final Office Action dated July 27, 2007. Claims 1, 3-11, and 18-35 are being appealed.

Prosecution History of the Claims

The subject application was originally filed on December 30, 2003 with Claims 1-35.

On September 26, 2005, in response to a non-final Office Action mailed on March 24, 2005, Claims 1 and 28 were amended.

On April 10, 2006, in response to the Final Office Action mailed on January 10, 2006, a Request for Continued Examination was filed, along with an amendment wherein Claims 1 and 28 were amended and Claims 2 and 12-17 were canceled.

On July 5, 2006, a Notice of Allowance was mailed in which pending Claims 1, 3-11, and 18-35 were allowed. However, on October 4, 2006, another Request for Continued Examination was filed along with an amendment in which Claims 1, 4, 5, 6, 8-11, and 28-29 were amended.

On May 14, 2007, in response to a non-final Office Action dated December 14, 2006, Claims 1, 7, and 9 were amended and new Claim 36 was submitted for consideration.

Finally, on October 31, 2007, in response to a Final Office Action dated July 27, 2007, a Notice of Appeal was filed. An Amendment After Final was filed April 15, 2008, in which Appellant amended Claim 28. Another Amendment After Final was filed on August 4, 2008, in which Appellant amended Claims 4, 6, and 8-11.

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IV. STATUS OF AMENDMENTS

The Amendments After Final made on April 15, 2008 and August 4, 2008 were entered.
No claim amendments are pending in this case.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A. Independent Claim 1

As recited in the Claim Appendix, Claim 1 reads as follows:

A dental implant system, comprising:

a dental implant including a body portion and an abutment portion that is integrally formed with the body portion, the implant body portion located at a distal end and configured to lie at least partially below a crest of a patient's jawbone, the abutment portion located at a proximate end of the implant and configured to lie at least partially above the crest of the patient's jawbone, the abutment portion comprising a flared portion, a shoulder portion and a final restoration portion, the shoulder portion lying between the flared portion and the final restoration portion, the dental implant further including a bore that extends generally along the longitudinal axis of the dental implant from a top surface of the abutment portion, the bore including an notch configured to releasably receive one or more lever arms or prongs on a mating component; and

a mating component including one or more lever arms or prongs configured to engage the notch.

With initial reference to the illustrated embodiment of Figures 1A-D, independent Claim 1 recites an implant 10 that includes a body portion 12, a collar 16, and an abutment portion 38. Application, ¶¶ 41, 46. The abutment portion 38 is integrally formed with or permanently attached to the collar 16. *Id.* at ¶ 46. The implant body portion 12 is located at a distal end of the combination and is configured to lie at least partially below a crest of a patient's jawbone while the abutment portion 38 is located at a proximate end and is configured to lie at least partially above the crest of the patient's jawbone. *Id.* at ¶ 10.

The abutment portion 38 comprises a flared portion 42 and a final restoration portion 40 and a shoulder portion 47 lying between the flared portion 42 and the final restoration portion 40. *Id.* at ¶ 47. Further, the implant 10 further includes a bore 52 that extends from a top surface 48 of the abutment portion 38 along the longitudinal axis of the implant. *Id.* at ¶¶ 47, 51, Figures 1A-C. The bore 52 includes a notch 57 that may be configured for receiving the prongs

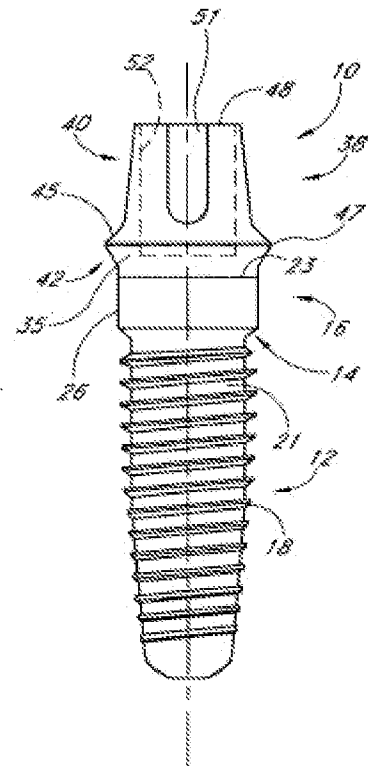


FIG. 1A

or snapping elements on a mating component to releasably engage the mating component. *Id.* at ¶ 52, Figure 1D.

B. Independent Claim 28

As recited in the Claim Appendix, Claim 28 reads as follows:

28. A method for installing a prosthetic tooth, comprising the steps of:
inserting a distal end of a body portion of a single stage dental implant having a body portion, an abutment portion and an internal bore having a notch into a patient's jawbone;
engaging a lever arm or prong of a mating component to the notch in the internal bore to releasably couple a mating component to the dental implant;
coupling a healing cap to the abutment portion such that the abutment portion is positioned within an internal cavity of the healing cap; and
removing the healing cap from the abutment portion.

Independent Claim 28 is directed to a method of installing a prosthetic tooth. As described above, an implant 10 includes a body portion 12, a collar 16, and an abutment portion 38, and an internal bore 52. *Id.* at ¶¶ 41, 46, 51. During a first stage of the method, a distal end of the body portion 12 of the implant 10 is inserted into a hole in a jawbone. *Id.* at ¶¶ 4, 60. After the implant 10 is installed into a patient's jawbone, a lever arm or prong of a mating component is engaged to the notch 57 in the internal bore 52 to releasably couple the mating component to the dental implant 10. *Id.* at ¶¶ 52, 60.

A healing cap 76 can be provided that includes an inner surface 77 which defines an internal cavity 78. *Id.* at ¶ 54. The inner surface 77 is sized and dimensioned such that the that healing cap fits over the upper region 40 of the abutment 38. *Id.* Thus, the healing cap 76 can be coupled to the abutment portion 38 such that the abutment portion 38 is positioned within an internal cavity of the healing cap 76. *Id.* Finally, the healing cap 76 can be removed from the abutment portion 38. *Id.* at 4, ¶¶ 7, 61.

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The rejection of Claims 30-34 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,769,913 issued to Hurson ("Hurson") in view of U.S. Patent No. 4,790,753 issued to Fradera ("Fradera") in view of U.S. Patent No. 6,951,462 issued to Kumar et al. ("Kumar").

B. The rejection of Claims 1, 3, 6-11, 28 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Fradera in view of Kumar.

C. The rejection of Claims 4, 5, 8, 9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Fradera in view of Kumar as applied above and in further view of International Publication No. WO 01/85050 issued to Hurson ("WO '050").

D. The rejection of Claims 18-27 under 35 U.S.C. § 103(a) as being unpatentable over Fradera and Kumar as applied above and in further view of U.S. Patent No. 5,135,395, issued to Marlin ("Marlin") and U.S. Patent No. 5,688,123, issued to Meiers et al. ("Meiers").

VII. ARGUMENT

Initially, Claims 4-6 and 8-11 stand rejected under 35 U.S.C. § 112, second paragraph. Next, Claims 30-34 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of Hurson in view of Fradera in view of Kumar. In addition, Claims 1, 3, 6-11, 28 and 29 stand rejected under Section 103(a) as being unpatentable over Fradera in view of Kumar. Further, Claims 4, 5, 8, 9 and 11 stand rejected under Section 103(a) as being unpatentable over Fradera in view of Kumar as applied above and in further view of WO '050. Finally, Claims 18-27 stand rejected under Section 103(a) as being unpatentable over Fradera and Kumar as applied above and in further view of Marlin and Meiers.

Appellant respectfully submits that the rejection under Section 112, second paragraph should be withdrawn due to the Amendment submitted herewith. Further, Appellant respectfully submits that the rejections under Section 103(a) should be withdrawn because the none of the cited references teaches, suggests, or otherwise discloses “one or more lever arms or prongs,” as recited in independent Claims 1 and 28. Further, Kumar teaches against the Examiner’s interpretation of Kumar and illustrates that “one or more lever arms or prongs” would be disadvantageous to the Kumar mechanism. Therefore, Claims 1, 3-11, and 18-35 should be allowed.

A. Claims 30-34 are Improperly Rejected Under the Judicially Created Doctrine of Obviousness-Type Double Patenting Should Be Withdrawn.

The Examiner’s rejection of Claims 30-34 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of Hurson in view of Fradera further in view of Kumar is improper because Claims 30-34 are patentable over Hurson and the cited art.

As discussed below with respect to independent Claim 28, Appellant respectfully submits that these claims are patentable over Hurson, Fradera, and Kumar. Therefore, Appellant respectfully submits that this rejection is improper and should be withdrawn.

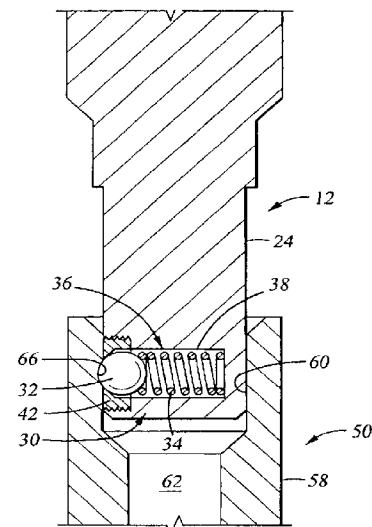
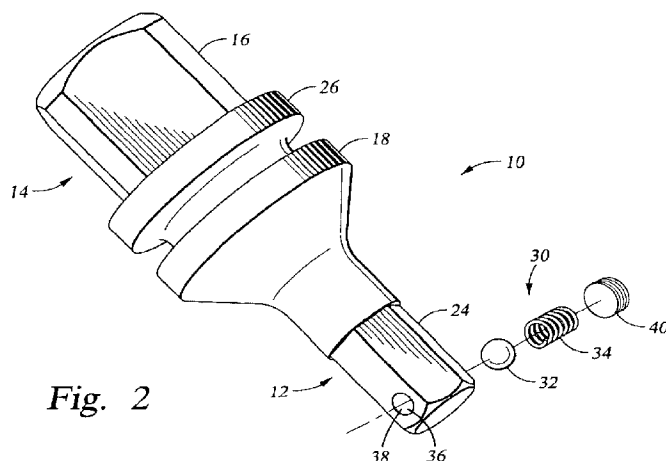
B. Claims 1, 3, 6-11, 28 and 29 are Improperly Rejected Under Section 103(a) as Being Unpatentable Over Fradera in View of Kumar.

The Examiner's rejection of Claims 1, 3, 6-11, 28 and 29 under Section 103(a) as being unpatentable over Fradera in view of Kumar is improper because neither Fradera nor Kumar teach each and every feature as recited in these claims.

Claim 1 recites, *inter alia*, a dental implant system comprising a dental implant and a mating component that includes "one more lever arms or prongs configured to engage [a] notch" in a bore of the dental implant. In a similar manner, independent Claim 28 recites, *inter alia*, "engaging a lever arm or prong of a mating component to the notch in the internal bore to releasably couple a mating component to the dental implant."

The Examiner has acknowledged that the screw for dental implants disclosed in Fradera, the primary reference, does not disclose at least these features of Claims 1 and 28. *See* Office Action, July 27, 2007, p. 4. Nevertheless, the Examiner has argued that Kumar discloses the "one ore lever arms or prongs configured to engage the notch" as recited in Claims 1 and 28. As discussed below, Kumar is devoid of any such disclosure or teaching and in fact, teaches away from such as configuration.

Kumar discloses a retention mechanism for a dental implant tool that allows the implant tool to releasably connect to a dental implant during maneuvering and implantation of the implant. *See* Kumar, col. 1, line 60-col. 2, line 32. As shown below in Figures 2 and 5, the



retention mechanism 30 is disposed on a drive shaft 24 of an engaging end 12 of the drive tool. The retention mechanism 30 includes a locking member 32, a biasing member 34, and a stop 42 that provide slidable movement of the locking member 32 within the housing 36 or axial bore 38, which movement is limited by the stop 42. *See id.* at col. 3, lines 11-20; col. 4, lines 34-35; Figures 2, 5.

Kumar also discloses that “[t]his connection is not based on frictional taper fit but on a retention mechanism having an active or moveable locking member and biasing member. **The biasing member biases the locking member to slideably move in an axial bore located in the driving tool.**” *Id.* at col. 4, lines 31-35. Kumar emphasizes that this slidable retention mechanism “will not damage the internal cavity of the implant, leave micro-fragments or residuals from the end of the driving tool, and provides a consistent connection force with the implant. Further, the likelihood that the implant will loosen from the driving tool and fall off is reduced.” *Id.* at col. 4, lines 35-41. Indeed, it appears that the spring-biased slidable spherical locking member allows the retention mechanism to safely and consistently engage the internal cavity of the implant.

However, Kumar never teaches or otherwise discloses any mechanism other one that employs translational movement—a slidably moveable, biased element or ball. Kumar never discusses any alternative mechanisms or modes of movement, such a pivotal, rotational, or otherwise. Kumar is devoid of any teaching or other disclosure of “one more lever arms or prongs configured to engage the notch” as recited in Claims 1 and 28. Thus, Appellant respectfully submits that Kumar does not and cannot teach the missing features of Claims 1 and 28.

Further, Kumar teaches away from the “one more lever arms or prongs configured to engage the notch” as recited in Claims 1 and 28. As noted above, Kumar emphasizes that a spring-biased slidable spherical locking member is advantageous. In order to provide the spring-biased slidable spherical locking member, Kumar discloses and teaches that the retention mechanism 30 requires three parts—a movable locking member 32, a biasing member 34, and a stop 42. If the Kumar mechanism were altered to include a single piece “lever arm or prong,” such a structure would fail to provide the translational or slidable movement of the spring-biased

slidable spherical locking member. The advantages of having a slidable retention mechanism, according to Kumar, are lost if a “lever arm or prong” is used. Accordingly, Kumar teaches against a single “lever arm or prong” that does not use slidable motion.

Furthermore, although Kumar indicates that alternative locking members can be used, these locking members are all disclosed as being used in a slidable mode of movement. Kumar indicates that the locking member 32 is “formed as a ball, but one skilled in the art would appreciate that other locking members can be used as well, such as a pin, button, cylinder, or the like. Further, the biasing member is shown as a spring” *See id.* at col. 3, lines 22-25. Kumar is devoid of any suggestion, disclosure, or teaching other than slidable or translation movement of the locking member in response to the biasing force of the biasing member. The failure of Kumar to disclose anything other than the spring-biased slidable spherical locking member is attributable to another of its goals: to ensure that the retention mechanism 30 is configured to allow the driving tool to disengage from the implant upon exertion of a “predictable amount of force.” As disclosed in Kumar,

[T]he retention mechanism and connection with the implant or fixture mount provides consistent tactile feedback while the dental driving tool disengages from the implant. A minimal or predictable amount of force is required to perform this disengagement. As such, any interference with the proper placement and location of the implant is greatly reduced, especially when the implant is placed in soft, cortical bone, such as in the posterior maxilla.

See id. at col. 4, lines 42-46. This “predictable amount of force” is essential to fulfill the express purpose of the disclosed configuration of the retention mechanism 30. Kumar emphasizes that the connection between the driving tool and the implant is “consistent and reliable.” *Id.* at col. 4, lines 29-31. The spring-biased slidable spherical locking member allows for this goal or purpose to be fulfilled. If a “lever arm or prong” were used in its stead, this goal or purpose of Kumar would be frustrated. A “lever arm or prong” would be unlikely to ensure that a “minimal or predictable amount of force” is required to disengage the driving tool. Additionally, a “lever arm or prong” would likely increase, not reduce, the amount of interference relative to the spring-biased slidable spherical locking member. Thus, Kumar’s express goals and purposes would be frustrated under the Examiner’s application of Kumar to Claims 1 and 28. Accordingly, Kumar

fails to disclose or otherwise teach “one or more lever arms or prongs,” as recited in Claims 1 and 28.

Accordingly, Appellant respectfully submits it would not be obvious to modify the cited art to include “one or more lever arms or prongs,” as recited in Claims 1 and 28. The claimed arrangement of “lever arms or prongs” advantageously provides an arrangement that reduces the number of parts and facilitates formation of the mating component through injection plastic molding. In contrast, the mechanism disclosed by Kumar requires additional components and is not suitable for manufacturing through injection molding.

Thus, Appellant respectfully submits that the rejection of Claims 1, 3, 6-11, 28 and 29 under Section 103(a) as being unpatentable over Fradera in view of Kumar should be withdrawn because neither Fradera nor Kumar teach each and every feature as recited in these claims.

C. Claims 4, 5, 8, 9 and 11 are Improperly Rejected Under Section 103(a) as Being Unpatentable Over Fradera in View of Kumar and in Further View of WO ‘050.

Claims 4, 5, 8, 9 and 11 were rejected under Section 103(a) as being unpatentable over Fradera in view of Kumar as applied above and in further view of WO ‘050. As noted above, neither Fradera nor Kumar teach, suggest, or otherwise disclose each and every feature recited in independent Claim 1. Furthermore, the combination of Fradera, Kumar, and WO ‘050 also fails to disclose each and every feature of Claim 1. Accordingly, Claims 4, 5, 8, 9, and 11 are allowable for at least the reason that they depend from an independent base claim. Therefore, Appellant respectfully requests that the rejection of Claims 4, 5, 8, 9, and 11 be withdrawn.

D. Claims 18-27 are Improperly Rejected Under Section 103(a) as Being Unpatentable Over Fradera And Kumar and In Further View of Marlin and Meiers.

Finally, Claims 18-27 were rejected under Section 103(a) as being unpatentable over Fradera and Kumar as applied above and in further view of Marlin and Meiers. As also noted above, neither Fradera nor Kumar teach, suggest, or otherwise disclose each and every feature recited in independent Claim 1. Furthermore, the combination of Fradera, Kumar, Marlin, and

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Meiers also fails to disclose each and every feature of Claim 1. Accordingly, Claims 18-27 are allowable for at least the reason that they depend from an independent base claim. Therefore, Appellant respectfully requests that the rejection of Claims 18-27 be withdrawn.

VIII. CLAIMS APPENDIX

Inserted below as a Claims Appendix is a copy of the finally rejected claims in the present case from the Amendment.

1. A dental implant system, comprising:
a dental implant including a body portion and an abutment portion that is integrally formed with the body portion, the implant body portion located at a distal end and configured to lie at least partially below a crest of a patient's jawbone, the abutment portion located at a proximate end of the implant and configured to lie at least partially above the crest of the patient's jawbone, the abutment portion comprising a flared portion, a shoulder portion and a final restoration portion, the shoulder portion lying between the flared portion and the final restoration portion, the dental implant further including a bore that extends generally along the longitudinal axis of the dental implant from a top surface of the abutment portion, the bore including an notch configured to releasably receive one or more lever arms or prongs on a mating component; and
a mating component including one or more lever arms or prongs configured to engage the notch.
2. (Canceled)
3. The dental implant system of Claim 1, wherein the body portion and the abutment portion of the implant are machined from a single piece of material.
4. The dental implant system of Claim 1, further comprising a cap, wherein the cap further includes a tissue retention flange at the distal end that extends below the shoulder portion when the cap is coupled to the abutment portion.
5. The dental implant system of Claim 4, wherein the tissue retraction flange also extends away from the flared portion forming a gap between the tissue retraction flange and the flared portion.
6. The dental implant system of Claim 1, further comprising a cap, wherein a body portion of the cap includes a base portion that is configured to rest at least partially on the shoulder portion of the abutment portion.

7. The dental implant system of Claim 1, wherein the body portion of the dental implant includes a bone apposition surface.

8. The dental implant system of Claim 1, further comprising a cap, wherein the cap is white.

9. The dental implant system of Claim 1, further comprising a cap, wherein the cap has a color that is substantially the same as a natural tooth.

10. The dental implant system of Claim 1, further comprising a cap, wherein the abutment portion and the cap have round cross-sections.

11. The dental implant system of Claim 1, further comprising a cap, wherein the abutment portion and the cap have non-round cross-sections.

12-17. (Canceled)

18. The dental implant system of Claim 1, in combination with a coping for creating a final restoration, the coping comprising a body portion having a proximal end, a distal end and an inner surface that defines an internal cavity and at least one standoff that extends from the inner surface towards a center of the internal cavity.

19. The dental implant system of Claim 18, wherein the at least one standoff extends at least about 25 microns from the inner surface.

20. The dental implant system of Claim 19, wherein the at least one standoff extends less than about 50 microns from the inner surface.

21. The dental implant system of Claim 18, wherein the coping is made of a material that can be melted and removed from a mold during an investment casting process.

22. The dental implant system of Claim 21, wherein the coping is made of plastic.

23. The dental implant system of Claim 22, wherein the coping is made from a material that is suitable for forming a portion of the final restoration.

24. The dental implant system of Claim 23, wherein the coping is made of gold.

25. The dental implant system of Claim 23, wherein the coping is made of a ceramic material.

26. The dental implant system of Claim 18, wherein the at least one standoff has a tapered shape.

27. The dental implant system of Claim 18, further comprising a flanged region that configured to rest upon a shoulder of a final abutment.

28. A method for installing a prosthetic tooth, comprising the steps of:

inserting a distal end of a body portion of a single stage dental implant having a body portion, an abutment portion and an internal bore having a notch into a patient's jawbone;

engaging a lever arm or prong of a mating component to the notch in the internal bore to releasably couple a mating component to the dental implant;

coupling a healing cap to the abutment portion such that the abutment portion is positioned within an internal cavity of the healing cap; and

removing the healing cap from the abutment portion.

29. A method as in Claim 28, wherein the step of coupling a healing cap to an abutment portion, further includes using a healing cap screw to couple the healing cap to the abutment portion.

30. A method as in Claim 28, further comprising

providing an impression cap with an injection port and a plurality of vent holes;

positioning the impression cap onto the abutment portion of the implant; and

injecting a first impression material into the impression cap through the injection port until the first impression material is extruded through at least one of the vent holes.

31. A method as in Claim 30, wherein the step of positioning the impression cap onto the abutment portion includes snapping the impression cap onto the shoulder of the abutment portion.

32. A method as in Claim 30, further including the steps of taking an impression of the patient's mouth by placing an impression tray filled with a second impression material over the impression cap and removing the impression tray and the impression cap from the patient's mouth.

33. A method as in Claim 30, further including modifying the shape of the abutment portion.

34. A method as in Claim 30, wherein the step of injecting the first impression material into the impression cap includes inserting a tip of a syringe filled with the first impression material into the injection port of the impression cap.

35. A method as in Claim 28, further comprising:

providing a coping having a body portion that comprises a proximal end, a distal end and an inner surface that defines an internal cavity and at least one standoff that extends from the inner surface towards a center of the internal cavity;

providing an analogue of the abutment portion of the dental implant,

placing the coping over the analogue;

applying a material suitable for investment casting to an outer surface of the coping;

encasing the coping and the material suitable for investment casting in an investment material;

melting the coping and the material suitable for investment casting;

removing the coping and the material suitable for investment casting from the investment material; and

filling a cavity within the investment material with a material suitable for forming a part of a final restoration.

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IX. EVIDENCE APPENDIX

Appellant is submitting no evidence with this appeal.

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X. RELATED PROCEEDINGS APPENDIX

Appellant is unaware of any related appeals or interferences.

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